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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/932,860	08/17/2001	Craig M. Carpenter	4880US (01-0170)	6588

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EXAMINER	
ZERVIGON, RUDY	
ART UNIT	**PAPER NUMBER**
1763	

DATE MAILED: 04/30/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

AS

Office Action Summary	Application No.	Applicant(s)	
	09/932,860	CARPENTER ET AL.	
	Examiner	Art Unit	
	Rudy Zervigon	1763	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *17 February 2004*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-5 and 7-13* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-5 and 7-13* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☒ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Oath/Declaration

The following is a statement of 37 CFR 3.73:

37 CFR 3.73 Establishing right of assignee to take action.

(a) The inventor is presumed to be the owner of a patent application, and any patent that may issue therefrom, unless there is an assignment. The original applicant is presumed to be the owner of a trademark application or registration unless there is an assignment.

(b)(1) In order to request or take action in a patent or trademark matter, the assignee must establish its ownership of the patent or trademark property of paragraph (a) of this section to the satisfaction of the Director. The establishment of ownership by the assignee may be combined with the paper that requests or takes the action. Ownership is established by submitting to the Office a signed statement identifying the assignee, accompanied by either:

(i) Documentary evidence of a chain of title from the original owner to the assignee (*e.g.*, copy of an executed assignment). The documents submitted to establish ownership may be required to be recorded pursuant to § 3.11 in the assignment records of the Office as a condition to permitting the assignee to take action in a matter pending before the Office; or

(ii) A statement specifying where documentary evidence of a chain of title from the original owner to the assignee is recorded in the assignment records of the Office (*e.g.*, reel and frame number).

(2) The submission establishing ownership must show that the person signing the submission is a person authorized to act on behalf of the assignee by:

(i) Including a statement that the person signing the submission is authorized to act on behalf of the assignee; or

(ii) Being signed by a person having apparent authority to sign on behalf of the assignee, *e.g.*, an officer of the assignee.

(c) For patent matters only:

(1) Establishment of ownership by the assignee must be submitted prior to, or at the same time as, the paper requesting or taking action is submitted.

(2) If the submission under this section is by an assignee of less than the entire right, title and interest, such assignee must indicate the extent (by percentage) of its ownership interest, or the Office may refuse to accept the submission as an establishment of ownership.

Applicant is requested, in reply to the present action, to complete PTO/SB/96 (reproduced on the following page) to perfect Applicant's 3.73(b) statement. Applicant's declaration statement of "[x] In an assignment filed herewith for recordation a true copy of which is attached hereto." The assignment is not found in the image file wrapper documentation.

PTO/SB/96 (08-00)
Approved for use through 10/31/2002. OMB 0651-0031
U.S.Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

STATEMENT UNDER 37 CFR 3.73(b)

Applicant/Patent Owner:_____

Application No./Patent No.:_____Filed/Issue Date:_____

Entitled:_____

_____, a_____.
(Name of Assignee) (Type of Assignee, e.g., corporation, partnership, university, government agency, etc.)

states that it is:

1. ☐ the assignee of the entire right, title, and interest; or

2. ☐ an assignee of less than the entire right, title and interest.
The extent (by, percentage) of its ownership interest is _____%

in the patent application/patent identified above by virtue of either:

A. [ ] An assignment from the inventor(s) of the patent application/patent identified above. The assignment was recorded in the United States Patent and Trademark Office at Reel _____, Frame _____, or for which a copy thereof is attached.

OR

B. [ ] A chain of title from the inventor(s), of the patent application/patent identified above, to the current assignee as shown below:

1. From:_____To:_____
The document was recorded in the United States Patent and Trademark Office at
Reel _____, Frame_____, or for which a copy thereof is attached.

2. From:_____To:_____
The document was recorded in the United States Patent and Trademark Office at
Reel _____, Frame_____, or for which a copy thereof is attached.

3. From:_____To:_____
The document was recorded in the United States Patent and Trademark Office at
Reel _____, Frame_____, or for which a copy thereof is attached.

[ ] Additional documents in the chain of title are listed on a supplemental sheet.

[ ] Copies of assignments or other documents in the chain of title are attached.
[NOTE: A separate copy *(i.e.,* the original assignment document or a true copy of the original document) must be submitted to Assignment Division in accordance with 37 CFR Part 3, if the assignment is to be recorded in the records of the USPTO. See MPEP 302.08]

The undersigned (whose title is supplied below) is authorized to act on behalf of the assignee.

_____ _____
Date Typed or printed name

_____
Signature

_____
Title

Claim Rejections - 35 USC § 103

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

2. Claims 1-5, and 7-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sajoto et al (USPat. 6,056,823) in view of Whitney (USPat. 4,638,150) as demonstrated by DeZubay, Egon A. et al (US 4,480,930 A).

Sajoto teaches a deposition chamber (12, Figure 2; column 4, lines 45-67) including:

i. A chamber body (12) having a cavity (55, 20; Figure 3A, column 6, lines 45-65) formed therein

ii. A chamber lid (14, Figure 2; column 4, lines 45-67) configured to enclose the cavity (Figure 2)

iii. A vapor delivery head (26, Figure 2; column 5, lines 23-35) positioned within the cavity

iv. A feed though device (40, Figure 3A; column 6, lines 12-44), having a longitudinal body portion (conduit for 40 (not labeled) – column 5, lines 65-67; Figure 3A; compare 208, Figure 2 of Application, [0036]) positioned in the chamber including a lumen (42/44 passage; Figure 2) as a longitudinal body, the feed through device being configured to receive vapor from a vapor source and transfer the vapor there through along a pathway (42, 44; Figure 2, 3A; column 5, line 65 – column 6, line 11) toward the vapor delivery head

v. At least one resistance ("power lead 67"; column 6, lines 37-44) heating device / resistor element (64, Figure 3A; column 6, lines 30-44) associated with the feed through device

vi. The heating device includes the resistance heater wherein at least a portion of the resistance heater is positioned within the continual helical groove (62/64 interface) of the feed through

device – The heater wires are shown in Figure 3A as staggered vertically in cross section which is a helical structure. As shown in Figure 3A, the continual helical groove is configured to complementarily receive the resistance heater (64)

The resistance heater further includes a pair of electrical resistance leads – terminal portion of 67, Figure 3A,

Sajoto further teaches electrical resistance leads (64, Figure 3A) shown to wind along the feed through. Sajoto also further shows (Figure 3A) that his heater (64) is formed into a helical pattern complementary with a continual helical groove.

Sajato does not teach:

i. Electrical resistance leads having at least a portion thereof disposed within a stainless steel thermally conductive sheathing
ii. Two resistor elements
iii. The heating device further includes a thermocouple positioned within the thermally conductive sheathing
iv. That his heater is either adhered or welded to the feed through device
v. A layer of thermal insulation disposed between the at least a portion of the heated section of the heating device and the chamber body and substantially circumscribing the longitudinal body portion and the at least a portion of the second heated section
vi. A temperature sensing device positioned between the layer of insulation and the longitudinal body portion of the feed through device

Whitney teaches a flexible wire heater device (30, Figure 4; column 2, line 42 – column 3, line 5) including:

vii. Electrical resistance leads / resistor elements (40; Figure 4; column 5, lines 19-35) having at least a portion thereof (see Figure 4) disposed within a stainless steel thermally conductive sheathing (46; Figure 4; column 5, lines 19-35)

viii. The heating device further includes a thermocouple[1] ("PTC component 14", "temperature-responsive component 14"; column 4, lines 54-68) positioned within the thermally conductive sheathing to form a "self-limiting" heater (column 4, lines 39-40)

ix. A layer of thermal insulation (42/44/42 column 5, lines 30-35) disposed between at least a portion of the thermally conductive sheathing (46; Figure 4; column 5, lines 19-35) heated section (40) of the heating device

x. A temperature sensing device ("PTC component 14", "temperature-responsive component 14"; column 4, lines 54-68) positioned inside the layer of insulation and configured to generate a signal representative of a temperature sensed thereby ("temperature-responsive component"; column 2, lines 7-25)

It would have been obvious to one of ordinary skill in the art at the time the invention was made to replace Sajoto's heater with Whitney's heater, and thereby substantially circumscribing the longitudinal body portion and the at least a portion of heated section, by either adhering or welding Whitney's heater to Sajoto's feed through device, inclusive, permitting a length of Whitney's layer of thermal insulation to be contiguous with Sajoto's longitudinal body portion (conduit for 40 (not labeled) – column 5, lines 65-67; Figure 3A; compare 208, Figure 2 of Application, [0036]).

[1] USPat. 4,480,930 demonstrates that PTCs are thermocouples (column 3, line 63).

Motivation to replace Sajoto's heater with Whitney's heater by either adhering or welding Whitney's heater to Sajoto's feed through device is to provide a heater with a temperature-responsive component to limit elevated temperatures as taught by Whitney (column 2, line 64 – column 3, line 2). Inclusive, motivation to permit a length of Whitney's layer of thermal insulation to be continuous with Sajoto's longitudinal body portion is to conclude the portion of Whitney's heater that is adhered to Sajoto's longitudinal body portion. Further, it is well established that changes in apparatus dimensions are within the level of ordinary skill in the art.(Gardner v. TEC Systems, Inc. , 725 F.2d 1338, 220 USPQ 777 (Fed. Cir. 1984), cert. denied , 469 U.S. 830, 225 USPQ 232 (1984); In re Rose , 220 F.2d 459, 105 USPQ 237 (CCPA 1955); In re Rinehart, 531 F.2d 1048, 189 USPQ 143 (CCPA 1976); See MPEP 2144.04).

Response to Arguments

3. Applicant's arguments filed February 17, 2004 have been fully considered but they are not persuasive.

4. Applicant's principle argument is directed to the context of the amendment filed in response to the first action after continued examination practice. Specifically, Applicant states that Sojoto and Whitney do not teach that a portion of Whitney's layer of thermal insulation is contiguous with Sajoto's longitudinal body portion as amended in claim 1. This claim requirement is equivalent to a claim requiring a relative length between Whitney's sheathing (46; Figure 4) length to Whitney's layer of thermal insulation (42,44; Figure 4) length. The Examiner's new grounds of rejection states:

"

...inclusive, permitting a length of Whitney's layer of thermal insulation to be continuous with Sajoto's longitudinal body portion (conduit for 40 (not labeled) – column 5, lines 65-67; Figure 3A; compare 208, Figure 2 of Application, [0036]).

"

Motivation to permit a length of Whitney's layer of thermal insulation to be contiguous with Sajoto's longitudinal body portion is to conclude the portion of Whitney's heater that is adhered to Sajoto's longitudinal body portion. Further, it is well established that changes in apparatus dimensions are within the level of ordinary skill in the art.(Gardner v. TEC Systems, Inc. , 725 F.2d 1338, 220 USPQ 777 (Fed. Cir. 1984), cert. denied , 469 U.S. 830, 225 USPQ 232 (1984); In re Rose , 220 F.2d 459, 105 USPQ 237 (CCPA 1955); In re Rinehart, 531 F.2d 1048, 189 USPQ 143 (CCPA 1976); See MPEP 2144.04).

5. Applicant states that "...the combination of Whitney and Sajoto does not result in a temperature sensing device being disposed between the recited layer of thermal insulation and longitudinal body portion of the feed through device which is configured to generate a signal upon sensing a temperature." In response, the Examiner confirms that the combination of Whitney and Sajoto does result in a temperature sensing device (Whitney - "responsive-responsive component"; column 2, lines 7-25) being disposed between the recited layer of Whitney's thermal insulation (42, 44) and Sojoto's longitudinal body within Sajoto's feed though device (40, Figure 3A; column 6, lines 12-44), having a longitudinal body portion (conduit for 40 (not labeled); Figure 3A; compare 208, Figure 2 of Application, [0036]) of the feed through device when:

"

It would have been obvious to one of ordinary skill in the art at the time the invention was made to replace Sajoto's heater with Whitney's heater, and thereby substantially circumscribing the longitudinal body portion and the at least a portion of heated section, by either adhering or welding Whitney's heater to Sajoto's feed through device, inclusive, permitting a length of Whitney's layer of thermal insulation to be continuous with Sajoto's longitudinal body portion (conduit for 40 (not labeled) – column 5, lines 65-67; Figure 3A; compare 208, Figure 2 of Application, [0036]).

"

6. In response to Applicant's position that "Sajoto teaches that a radiation shield 65 is disposed over the heater to prevent thermal radiation for heating the outer shell 41" (col. 6, lines 34-36), while, as shown in FIGS. 2 and 3A, a thermocouple (66) is disposed external to the radiation shield 65. In other words, Sajoto's thermal radiation shield is disposed between the thermocouple and the heating device." Is moot in view of the structure of the Examiner's rejection that specifically delineates a replacement of Sajoto's heater with Whitney's heater as discussed above and in prior actions.

7. Applicant's disagreement with the Examiner's position that Whitney's PTC component 14 is a temperature sensing (signal generating) device, i.e. thermocouple, is acknowledged. However, the Examiner maintains his position as demonstrated by DeZubay, Egon A. et al (see above).

8. With respect to Applicant's position that DeZubay does not support Whitney's PTC component 14 is a temperature sensing device, the Examiner disagrees. Whitney does not state

the name of his PTC acronym. Yet as DeZubay demonstrates, PTC are well known in the art as being thermocouples (column 3, line 63). Further, Applicant states:

"

The concept taught by Dezubay has essentially no relationship to the concept of a "positive thermal coefficient" material as taught by Whitney.

"

If Applicant believes Whitney's PTC article stands for "positive thermal coefficient", then Applicant must provide a location in Whitney's disclosure supporting Applicant's position. There is no teaching in Whitney that Whitney's PTC is, as Applicant contends, a "positive thermal coefficient". To the contrary, Dezubay supports the common usage of "PTC" as being a specific type of thermocouple (see above). Further, according to the dictionary definition of "thermocouple":

"

thermocouple[2] – *n* a device for measuring temperature in which a pair of wires of dissimilar metals (as copper and iron) are joined and the free ends of the wires are connected to an instrument (as a volt meter) that measures the difference in potential created at the junction of the two metals.

"

As such, Dezubay supports the common teaching in the art that PTCs are thermocouples as taught by Whitney.

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[2] Merriam-Webster's Collegiate Dictionary - 10th Ed. p.1223

9. With respect to Applicant's position that welding would destroy Whitney's thermocouple, the Examiner disagrees. Whitney specifically describes welding components (modules 24; Figure 2) to Whitney's heater (40; Figure 4; column 5, lines 19-35) to measure temperature (column 5, lines 28-31). Thus the heater components behind Whitney's stainless steel sheath survive welding. There is reasonable expectation for success that Whitney's internal components (32, 36, 34, 38, 40...Figure 4) would also survive welding Whitney's stainless steel sheath to Sato's longitudinal body portion.

10. Applicant is again urged to complete PTO/SB/98 on page 3 to perfect assignment under 3.73(b).

Conclusion

11. Applicant's amendment necessitated the new grounds of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Rudy Zervigon whose telephone number is (703) 305-1351. The examiner can normally be reached on a Monday through Thursday schedule from 8am through 7pm. The official after final fax phone number for the 1763 art unit is (703) 872-9311. The official before final fax phone number for the 1763 art unit is (703) 872-9310. Any Inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Chemical and Materials Engineering art unit receptionist at (703) 308-0661. If the examiner can not be reached please contact the examiner's supervisor, Gregory L. Mills, at (703) 308-1633.

JEFFRIE R. LUND
PRIMARY EXAMINER